

Lean, but is it Mean? Union members' views on a high performance workplace system

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ABSTRACT

The growing literature on high performance workplace systems suggests that in a unionised environment such systems can be advantageous for workers. This paper reports on a study of New Zealand dairy workers' views on the introduction of a hpws. It reports little evidence to support the more optimistic claims in the literature. But it also reports that union members still support hpws, primarily for reasons of job security. Thus notwithstanding many of the findings, the paper concludes that there are limited grounds for a degree of optimism about the potential of union involvement in hpws to enhance worker voice.

Introduction

For some considerable time we have had an interest in the ways in which on-the-job union activity, the redesign of work, workers' education and training, and employee involvement at the workplace can come together in order to provide workers with a 'voice,' both in their work and in the wider society (eg., Law & Piercy, 1999, 2000a, 2000b, 2000c; Piercy, 1999, 2000). Union commissions, especially contracts from the New Zealand Dairy Workers' Union (DWU), have been quite influential in shaping the focus of our work (eg., Law, 1994, 1998, 2002; Law & Cochrane, 2004; Law & Piercy, 2001). Over the last couple of years, the DWU has encouraged us to explore how high performance (manufacturing) workplace systems (hpws) weave into the mix. This paper has arisen out of that new line of inquiry. It seeks to provide a New Zealand contribution to a growing academic literature in the reorientation of workplace organisation in the direction of greater worker involvement and participation, especially through the introduction of various forms of hpws (Handel & Levine, 2004). Specifically, the paper's purpose is to report and analyse, in the context of that literature, selected findings from a DWU-commissioned study of members' view on the introduction of 'Manufacturing Excellence,' a hpws, at Fonterra's Whareroa (Hawera) complex, the world's largest dairy manufacturing site.

The paper begins with a discussion of the literature. It then introduces, again very briefly, TRACC (Manufacturing Excellence), the specific hpws that has been implemented at Whareroa. This is followed by an overview of the study that includes an outline of the research approach. The presentation and discussion of a selection of findings constitutes the main body of this paper; in this paper we focus primarily on indicators of worker satisfaction and union-related issues. In the conclusion we offer some formative views on the extent to which our study adds to the academic literature.

It should be noted that in this paper we do not consider 'skilling' in the context of the hpws we studied, even though it is obviously an important element, as that particular topic has been discussed recently elsewhere (Cochrane *et al.*, 2004) and will be elaborated on further in future publications.

High performance workplace systems and workers' responses: An overview

There is now quite a broad body of work that holds that hpws could pay dividends for both workers, in terms of higher levels of job satisfaction, employment security, remuneration and better quality employment, and employers, through high productivity, better quality production and ultimately enhanced profitability and competitiveness (Applebaum *et al.*, 2000). There is also some evidence that union involvement can be positive for both workers employers. Black and Lynch (2001, 2004), for example, point to the productivity enhancing effects of production systems that emphasise stronger worker voice, especially when that voice is articulated through unions. Similarly, Small and Yasin (2000) report that in the implementation of advanced manufacturing technology the human aspect of technology adoption, principally worker involvement, is critical and that unions can have a significant positive effect.

In a study of 146 Veterans Health Administration centres, Harmon and Scotti *et al.* (2003) found while management systems that encouraged worker involvement increased costs per worker, it also resulted in more satisfied employees, less organisational turmoil and lower service delivery costs thus achieving substantial savings overall.

Along with the optimists there are, of course, no shortage of sceptics (Lloyd & Payne, 2002). As Cabrera *et al.* (2003) observe, the debate surrounding the accuracy of these claims has spawned a “plethora of studies” that probe the extent of the actual diffusion of these practices and the impact of such workplace innovation on firms, workers and unions. In a broad review of a substantial number of these studies Handel and Levine (2004, p.36) consider, amongst other things, one of the central claims of the proponents of hpws: that the heightened levels of worker involvement leads to higher levels of worker job satisfaction. They find that these claims have generally been supported by recent research (Appelbaum *et al.*, 2000; Freeman & Rogers, 1999; Hodson, 2001; Hunter *et al.*, 2002).

However, as Graham (1993) noted in an earlier study, significant levels of dissatisfaction can be associated with hpws when employers use worker involvement as a control mechanism to increase the pace of work. And sceptics can take some comfort from Godard's (2004, p.360) wide ranging critical assessment of the hpws literature. That study suggests the quite pessimistic finding that the impact on worker job satisfaction of hpws practices such as autonomous teams may in fact be negative while the overall effect on social-psychological variables was more complex than assumed by the proponents of hpws.

In an attempt to move beyond the increasing polarisation of the hpws debate between those who are unqualifiedly enthusiastic and those who where equally strongly critical, Anderson-Connolly *et al.* (2002) decompose the process of workplace transformation into distinct components: intensity, autonomy, team-work, skilling and computing. They then analyse the impact of these factors on the psychological and physical wellbeing of workers in a large US manufacturing corporation. These authors found a complex pattern where some aspects of workplace transformation proved harmful to worker well-being and decreased job satisfaction while other aspects were beneficial and contributed to increased levels of satisfaction. They also found that the effects were conditioned by the status of the individual within the corporation. For example, while some components of workplace transformation, such as autonomy, contributed to the satisfaction and well-being of non-managers they were a stressor to management level employees. In her study of a large, unionised, telecommunications company, Batt (2004) also found that status within an organisation was related to satisfaction with aspects of hpws. Workers participating in self managed teams reported significantly higher levels of perceived discretion, employment security, and satisfaction while supervisors reported the opposite. Middle managers who had initiated the implementation of these innovations also reported higher levels of employment security than their non-innovating counterparts.

In their conclusion, Anderson-Connolly *et al.* (2002, p.409) argue that such productivity enhancing changes as the implementation of hpws are more or less inevitable but that this process is contested and offers workers the opportunity to pursue those changes that enhance this psychological and physical well-being while opposing those aspects that do not. Farris and Toyama (2002) would concur with this assessment of the possibility of mitigating the impact of the ‘mean side of lean’ by focusing on the importance of ‘worker voice’, a key aspect of the hpws paradigm. Their comparative study of US and Japanese lean production systems also points to the tensions within production systems, such as hpws, between those elements that improve productivity and product quality through increased worker effort and stress, and reduced worker health and safety, and those that promote workers’ job satisfaction through increased autonomy, interaction with co-workers and upskilling (Bauer, 2004).

Closer to home, sceptics of unions’ strategic capacity to take advantage of such opportunities can derive some support from Buchanan and Hall's (2002) analysis of 19 case studies of best practice in the Australian metal and engineering sector. Buchanan and Hall acknowledge that team-working has the potential to provide workers with opportunities for greater autonomy and control at work. However, they doubt the ability of workers to press their claims for increased autonomy against the firm's desire for increased labour flexibility, reduced waste and ‘slack’ in the labour process and strengthened monitoring and surveillance of worker and process

performance. Furthermore, they report that this was not a product of a lack of worker voice, as, by and large, trade unions were present and active. Rather they suggest that it was, at least in part, a consequence of a union strategy that legitimated the workplace change process, albeit in pursuit of higher levels of worker job satisfaction empowerment and control over change, and ultimately marginalised rather than empowered unions.

TRACC/Manufacturing excellence

BACKGROUND: In the late 1980s and early 1990s, many New Zealand unions bought into the workplace reform campaign that was very actively promoted by the Engineers' Union (EPMU), the CTU, and the Trade Union Education Authority (TUEA). Although in one sense momentum peaked with the holding of the Workplace New Zealand Conference in September 1992, the enactment of the Employment Contracts Act in 1991 and the disestablishment by way of statutory repeal of TUEA a year or so later were fairly ominous signs that this particular initiative was unlikely to survive the neoliberal onslaught. However, throughout the 1990s, the DWU retained quite a strong commitment to the general principles of workplace reform. As reported in Perry *et al.* (1995), in the late 1980s the DWU and the industry, with the help of the CTU, sought to follow a more cooperative path following a major industrial confrontation that led to spilt milk. Under a Memorandum of Understanding (MoU), an industry approach to skill development and job redesign was introduced. Union and industry employer representatives visited all sites to promote the strategy.

The MoU experiment received only lukewarm endorsement from union members. When Gibson (1994) interviewed workers on four sites and key officials from both sides in late 1992 and 1993, she found mounting evidence that there was insufficient trust within the industry to make the strategy work. About the same time, Law (1994, 1998) undertook a postal survey of the union's membership. It included a series of questions about the MoU and its implementation. The findings were not encouraging. Fewer than half the union members on the MoU sites supported the strategy, although only a very small minority (3.9%) were hostile to it. Further, while members were very supportive of efforts to introduce skill-based pay, negative comments about the MoU were often linked to doubts about employers' motives and intentions. Law's study also unearthed considerable reservations about the effectiveness of the worksite consultative process that had been established under the MoU.

Eventually, the MoU initiative fell over, but that did not dull the DWU's interest in workplace systems that might offer members new opportunities. In 1999 the union's then National Secretary, Ray Potroz, approached Kiwi Dairies (now part of Fonterra) with a proposal to adopt a shop floor based, improvement methodology called 'TRACC.' The union's aim was to increase the scope of worker discretion, up-skill its membership, and enhance the viability of the cooperative's operations and hence protect the jobs of union members. In 2000, Kiwi purchased a license for the TRACC (later re-named Manufacturing Excellence) from Competitive Capacities International (CCI) and began to introduce the programme as a joint exercise with the DWU and the EPMU (Parkin, 2004). The programme is now being run out through all of Fonterra's core manufacturing plants and could well migrate to its Bonlac factories in Australia.

The TRACC methodology developed by CCI is a variant of lean production (Landman, 1999, p. 39). But although it shares many of the standard features of such production systems--team working, 5S housekeeping, and continuous improvement--it differs from other variants in the extent to which it seeks to involve the workforce in the workplace transformation process. Unlike, for instance, Womack and Jones's (1996) emphasis on the use of external agents to effect radical improvement paths in organisations, CCI focus on training members of the workforce to assume the key roles necessary for sustaining transformation in the workplace. Indeed the whole TRACC approach is a people centred one aimed at securing productivity and quality improvement through worker participation and empowerment.

The membership survey

The study comprised a postal survey of a sample of union members in departments/sections in which ME had been introduced. Because of the nature of work in the industry, especially shift work and the substantially off-site dimension of milk collection, the postal survey has been found in the past to be a productive way of gathering data from NZDWU members (Law, 1994, 2002). The questionnaire, which was piloted, contained a mix of 'tick box' questions and those that invited respondents to make written comments. Questions were based on a combination of suggestions in the literature and focus group discussions. The study was conducted in three stages:

- a comprehensive literature search,
- a mix of focus groups on the Hawera site and educational seminars – on-site and off-site-conducted mainly in late 2002/early 2003, and
- a questionnaire survey mailed in October 2003 to a systematic sample of union members selected from a random base. A follow-up letter was sent in November.

A total of 283 names were selected, approximately 50% of the DWU members involved in ME at that time. (The total DWU membership on site was over 700, about 98% of eligible workers). After 'gone no address' returns were deleted, the refined sample was 273. There were 111 responses of which 5 were not useable. This response (41%) is lower than previous DWU postal surveys, but still sufficient to draw meaningful conclusions. The 106 useable responses were from 81 males, 24 females, and one person who did not indicate his/her gender. The response met 'good fit' criteria in terms of the sample's known demographic characteristics and departmental distribution.

Selected findings

IMPLEMENTATION: A number of questions probed how well ME had been implemented, the extent to which workers were involved, the quality of training and consultancy, and recommendations for improvement. Respondents were divided on how well ME had been introduced; of 94 valid responses, 52.1% reported 'well/very well' while 31.9% indicated 'poor/very poor.' The responses to several questions indicated a strong sense of frustration that ME was not realising its full potential. From written comments it was clear that many union members thought that implementation, at least in some departments, had been too rushed, poorly planned, undemocratically imposed, or dominated by senior workers. Ninety people made additional comments.

Generally positive comments included:

- Guys taking it were very enthusiastic.
- Intro was well done and very thought provoking. Allowed all to be involved rather than having no say at all.

Generally negative comments included:

- Manufacturing excellence, just turn up and we were told 'it's here' and it's not going away.
- Not enough of the staff knew anything about it and they tried to run before they could crawl.
- We were unsure what resources and workload were needed (cheese was first). Change in culture needed. The speed of change slowed. Going from dictatorial to democratic leadership style.
- We are never asked if we want to do ME. We are told 'you are doing it.'
- Levels seven & eight were selected initially then they realised no monitors so got 1 female and 1 non Pakeha and tried to run it the same way as they already ran the factory. After that it was selected groups until finally it had shop floor reps, because they needed somebody to do the work.

Most interestingly, just on 70 respondents made substantive suggestions. By and large, these responses reflected a desire to see ME work better.

FELLOW WORKERS AS TRAINERS: As noted above, the active involvement of on-site workers as co-ordinators, trainers, and leaders is central to the TRACC methodology. Respondents were generally satisfied with the overall quality of teaching/training they had received: 49% ‘very good/good;’ 21% ‘poor/very poor.’ The survey confirmed the impressions gained from focus groups that the contribution made by workforce coordinators and trainers is a good feature of ME: 74% ‘agreed/strongly agreed;’ 10% ‘disagreed/strongly disagreed.’

IN-DEPTH VIEWS OF ME: A number of questions, especially later in the survey, tried to explore in more depth respondents’ views about ME. Very clear views included:

TABLE 1
Views of ME

Questions	Agree/strongly agree %
The principles of ME aren’t much different from other programmes, its the way they are brought together, implemented, and backed up that makes it work	81.2
The idea of ME is good but implementation has been frustrated by a lack of resources	78.7
Before any section/department implements ME as many people as possible should do the five-day course	81.0
For ME to really work in my section/department we need to be able to cut and paste the programme so that it fits our particular requirements	85.2
A problem with ME has been the lack of follow-up. Workers make good decisions about equipment, cabinets and the like, but it takes months for them to be implemented	78.8

More mixed views included:

TABLE 2
Views of ME

Questions	Agree/strongly agree %	Disagree/strongly disagree %
The people in my section/department thought the games that we played on the courses were a lot of nonsense	46.8	24.5
Sometimes ME is applied too rigidly with a consultant or a coordinator or a trainer saying that there is only one way to do something	44.6	33.3
Some of the ME modules, like leadership, cover stuff that’s done in other programmes. There should be recognition of prior learning	61.2	14.4
One of the problems with ME is the seasonal nature of the industry. There is too much stop/go and we can’t follow through on decisions	39.4	26.1
One of the problems with ME has been the lack of staff. People go off on courses and there aren’t enough other workers to pick up the load	65.7	24.2

VIEWS ON MANAGEMENT’S INTENTIONS AND COMMITMENT: Overall, the responses to questions about management fell into the ‘mixed’ category. Taken together, the responses indicate that around 50% of respondents were reasonably positive about management’s commitment and ME’s longer-term prospects:

TABLE 3

Views on
management
intentions and
commitment

Questions	Agree/strongly agree %	Disagree/strongly disagree %
There have been lots of high performance schemes tried at Hawera and they usually fade out after a couple of years	73.9	14.5
I expect ME to fall over within a couple of years	28.4	48.4
There isn't enough 'trust' at Hawera for ME to work in the longer term	28.7	53.2
Once management has picked the workers brains, they won't be interested in keeping us involved	25.6	53.4
Management has supported the implementation of the manufacturing excellence program by providing adequate training	49.0	27.2

Nevertheless, respondents were less confident about middle management buy-in:

TABLE 4

Views on
management
intentions and
commitment

Questions	Agree/strongly agree %	Disagree/strongly disagree %
ME is a good idea, but there isn't enough supervisor/management buy-in to make it work in the longer term	38.6	37.2
The biggest problem with ME is the threat to middle management. Most middle managers will eventually try to undermine ME	44.7	27.6
Most people in my section/department go along with ME but we are pretty cynical about the long-term prospect	61.4	22.1

COMPANY IDENTIFICATION/ATTITUDE TO FONTERRA: Trust is critical to the success of hpws. The responses summarised above reveal a measure of caution or even suspicion, at least among a solid minority of respondents. However, notwithstanding some suspicion, the focus groups suggested that most workers involved in ME accepted that their interests and those of Fonterra were entwined. The survey found strong support for the view that *What's good for Fonterra is good for me*: 64% of respondents 'agreed/strongly agreed,' just under 20% 'disagreed/strongly disagreed.' However respondents were a little less confident in Fonterra's willingness to consult with the DWU: 58.4% rated Fonterra's willingness to consult the union as 'good/very good' while 12.3% rated it 'poor/very poor.' Respondents were less confident about Fonterra's willingness to consult with employees: 43.3% rated it as 'good/very good,' 28.8% rated it 'poor/very poor.'

AUTONOMY: One very important claim made in the literature is that hpws provide opportunities for workers to exercise a degree of control over their workplace. This study's findings suggest that most respondents believe that they have limited involvement in key decision making.

There is not as much real worker involvement as everyone claims. When you look closely, most ME teams are dominated by people on the higher levels. Lower level workers aren't really involved.

Agree/strongly agree	49.5%	
No feelings either way	16.2%	
Disagree/strongly disagree	34.3%	Valid responses = 99

'Worker involvement' through programme like ME is really a myth. In the end management drives through what it wants.

Agree/strongly agree	54.7%	
No feelings either way	14.4%	
Disagree/strongly disagree	30.9%	Valid responses = 96

Other responses on aspects of autonomy and control included:

TABLE 5
Views on
autonomy and
control

Questions	Team picks its own %	Some/a lot of involvement %	No involvement %
Involvement in selecting team members?	13.8	48.9	37.2
Involvement in selecting team leaders?	13.7	30.5	55.8
Setting production targets?	6.5	40.9	52.7
Setting budgets?	3.2	10.6	86.2
Flatter management?	30.2	61.6	8.1

A SAFER, MORE SATISFYING WORKPLACE? Notwithstanding the lack of autonomy and control, 52.8% of respondents 'agreed/strongly agreed' that the work environment was safer; 32.0% 'disagreed/strongly disagreed'; 15.5% had no feelings either way. There was not the same level of agreement about improvement in the safety of their own job: 43% reported it was 'safer/a lot safer'; 54% believed it had 'stayed the same'; 3.0% indicated that it was 'less safe/a lot less safer.'

About a quarter (24.4%) indicated that there was 'more pressure/a lot more pressure' from team-mates to come to work when sick or injured; 69% reported it had 'stayed the same'; 6.4% reported 'less pressure/a lot less pressure.' But there was some evidence of increased pressure from management to come to work if sick or injured: 36.1% 'more pressure/a lot more pressure'; 58.8% 'stayed the same'; 5.1% 'less pressure/a lot less pressure.'

There was also some evidence that the nature and pace of work had changed. 66.3% reported that the number of tasks had 'increased/greatly increased'; 33.7% indicated that they had 'remained the same'; none indicated that they had reduced. A smaller percentage (42%) reported that the pace of work had 'increased/increased greatly'; 55% reported that it had 'remained the same'; 3.0% indicated that it had 'fallen/fallen greatly.' Opinion was divided over the adequate staffing of their team to meet management expectations; 42% 'agreed/strongly agreed' but 41% 'disagreed/strongly disagreed'; 17% had 'no feelings either way.' There was little support for the suggestion that the ME programme had reduced employment in their team; 12.7% 'agreed/strongly agreed'; 55.8% 'disagreed/strongly disagreed.' Nor was there much support (11.2%) that 'as a result of ME absenteeism had been reduced'; 61.7% 'disagreed/strongly disagreed.'

A majority (58.2%) indicated that the skill required in their job had 'increased/increased greatly'; 41% reported that it had 'stayed the same'; none thought it had reduced. However very few respondents (5.3%) 'agreed/strongly agreed' that changes to their job were reflected in their wages; 65.2% 'disagreed/strongly disagreed'; 29.5% had no feelings either way.

A substantial majority (66.3%) 'agreed/strongly agreed' that there had been a lot of gains in other sections/departments since ME was introduced; 6.7% 'disagreed/strongly disagreed.' Opinion was divided (37.9%: 33.7%) on whether or not morale on site had 'improved a lot since ME was introduced.'

There was agreement from 46% of respondents that 'ME has opened up opportunities for workers to advance in their jobs'; but 25.0% 'disagreed/strongly disagreed.' However, 63.3% 'agreed/strongly agreed' that it had provided new training opportunities; 22.5% 'disagreed/strongly disagreed.'

Finally under this heading, there was no substantial evidence that individual's 'job satisfaction had improved quite a lot' because of ME; 19% 'agreed/strongly agreed'; 38.5% 'disagreed/strongly disagreed'; 24% reported 'no feelings either way.' Having said that, it should be noted that, as we report elsewhere, about 25% of respondents did identify off-the-job (home and community) benefits that had flowed from their involvement with ME (Cochrane, Law, and Piercy, 2004).

UNION INVOLVEMENT: Previous DWU studies (Law, 1994; 2002) have revealed the value placed on union involvement in industry training. Although, again, the next tables do not tell the whole story, in general they confirm that for a significant proportion of the workforce, union involvement in hpws is important.

I wouldn't be too keen on ME if the Dairy Workers' Union wasn't actively involved.

Agree/strongly agree	31.9%	
No feelings either way	33.0%	
Disagree/strongly disagree	35.1%	Valid responses = 94

In general, do you agree that unions should be involved in promoting HPWS such as ME?

Agree/strongly agree	70.7%	
No feelings either way	17.2%	
Disagree/strongly disagree	12.1%	Valid responses = 99

There was only limited agreement (24.4%)_that ME was undermining the delegate structure; 55.5% disagreed.

JOB SECURITY: In the light of the above, it may well be asked why workers or the union should continue to support a hpws such as ME. The single answer appears to be job security: the reason why the DWU proposed the programme to Kiwi Dairies in 1999.

We (workers and union) need to support programmes like ME because unless we continue to improve performance our jobs won't be secure.

Agree/strongly agree	65.7%	
No feelings either way	10.1%	
Disagree/strongly disagree	24.3%	Valid responses = 99

Having said that, just on 70% of respondents agreed that *'If ME is going to work it's got to benefit the workers. The Union has to make sure that we see the benefits in our pay packet!'* 15.2% disagreed.

Discussion

The selection of findings reported in this paper enable some useful comparisons with the international literature. First, from the workers' perspective, there is not a lot of evidence in these findings to support the more optimistic claims of authors such as Appelbaum *et al.* (2000). ME does not seem to have a very significant impact on job satisfaction; this finding is at odds with Hendel and Levine's (2004) review. Further analysis may support Batt's (2004) finding that satisfaction with hpws varies according to status. If, following Anderson-Connolly *et al.* (2002), the notion of 'satisfaction' is unpacked, we find that workers are not yet seeing any benefits in the pay packet. Nor do they regard their own jobs as being safer, although most respondents agree that the work environment in general is safer. But on a more positive note, the majority of workers agree that ME offers them new opportunities, especially when linked to skills development. Another indicator of satisfaction that is not discussed in the literature is off-site (home or community) benefits. Although we do not report the findings here because of space, it is appropriate to note that around 25% of respondents reported some such benefits as a result of their participation in ME (Cochrane *et al.*, 2004).

Second, while respondents appear to be reasonably confident that ME will last where other programmes have fallen over, the commitment and role of middle management appears to remain a problem. We suspect, based on the focus group sessions, that further analysis may reveal that this assessment varies from department to department.

Third, although the focus groups had been more positive, the survey found little evidence of enhanced worker voice at the micro level. This suggests that little has changed since Gibson's (1994) and Law's (1994) earlier work. Many respondents felt that implementation had been imposed on them; a finding that accords in some respects with Graham's (1993) study. There also were few positive responses overall to different questions about autonomy and control. That impression is also reflected in written comments. However, there was some implicit if not explicit

recognition that union involvement was a positive. Thus it is a little too early to say whether or not our findings support Buchanan and Hall's (2002) doubts about the ability of workers and unions to take advantage of a hpws to press their claims for a greater say.

Fourth, the study shows quite convincingly that union members support ME for reasons related to job security and, for the same reasons, believe that the DWU should be involved. Union members accept that in dairy manufacturing, quality and hygiene are cornerstones of job security. The temporary closure in October 2004 of Fonterra's Hautapu plant because of a bacterial problem was another reminder. The challenge for the DWU—and this relates primarily to capacity as well as to the issues raised by Buchana and Hall (2002)—is to try to enhance worker voice as the ME programme is rolled out on other sites.

Conclusion

Notwithstanding all of the above, we do have some optimism. Elsewhere (Cochrane *et al.*, 2004) we have noted that there is some support in this study for the claims made by Black and Lynch (2001, 2004). Looking at the positives, in the wider context of the union's involvement in the industry and its strong level of workplace organisation, we are of the formative opinion that, within limitations, the interconnection between skills development, hpws, and worker voice can be positive from a democratic/labour studies perspective.

References

- Anderson-Connolly, R., Grunberg, L., Greenberg, E.S. & Moore, S. 2002, 'Is lean mean? Workplace transformation and employee well-being', *Work, Employment and Society*, vol. 16, no. 3, pp.389-413.
- Appelbaum, E., Bailey, T., Berg, P. & Kalleberg, A.L. 2000, *Manufacturing Advantage: Why High-Performance Work Systems Pay Off*, ILR Press, Ithaca, New York.
- Batt, R. 2004, 'Who benefits from teams? Comparing workers, supervisors and managers', *Industrial Relations*, vol. 43, no.1.
- Bauer, T.K. 2004, 'High performance workplace practices and job satisfaction: evidence from Europe', *No. IZA Discussion paper 1265*. Institute for the Study of Labor, Bonn.
- Black, S.E., & Lynch, L.M. 2001, 'How to compete: the impact of workplace practices and information technology on productivity', *The Review of Economics and Statistics*, vol. 83, no. 3, pp.434-445.
- _____. 2004, 'What's driving the new economy?: the benefits of workplace innovation', *The Economic Journal*, vol. 114, no. 493, pp.F97-F116.
- Buchanan, J. & Hall, R. 2002, 'Teams and control on the job: insights from the Australian metal and engineering best practice case studies', *The Journal of Industrial Relations*, vol. 44, no. 3, pp.397-417.
- Cabrera, E., Ortega, J. & Cabrera, A. 2003, 'An exploration of the factors that influence employee participation in Europe', *Journal of World Business*, vol.38, no. 1, pp.43-54.
- Cochrane, W., Law, M., & Piercy, G. 2004, 'The knowledge society and high performance workplace systems: Enhancing worker voice.' A paper presented to the Labour, Employment, and Work Conference, Wellington, New Zealand, November 22-23.
- Farris, D. & Tohyama, H. 2002, 'Productive efficiency and the lean production system in Japan and the United States', *Economic and Industrial Democracy*, vol. 23, no. 4, pp.529-554.
- Freeman, R.B. & Rogers, J. 1999, *What Workers Want*, Cornell University Press, Ithaca, New York.
- Gibson, J. 1994, *Award Restructuring in the New Zealand Dairy Manufacturing Industry*, Unpublished MSocSc thesis, University of Waikato, Hamilton.
- Godard, J. 2004, 'A critical assessment of the high-performance paradigm', *British Journal of Industrial Relations*, vol. 42, no. 2.
- Graham, L. 1993, 'Inside a Japanese transplant: a critical view', *Work and Occupations* vol.20, pp.147-173
- Handel, M.J., & Levine, D.I. 2004, 'Editors' introduction: the effects of New Work practices on workers. *Industrial Relations*, vol 43, no. 1, pp.1-43.
- Harmon, J., Scotti, D., Behson, S. & Farias, G. 2003, 'Effects of high-involvement work systems on employee satisfaction and service costs in veterans healthcare', *Journal of Healthcare Management*, vol. 48, no. 6, pp.393-406.
- Hodson, R. 2001, *Dignity at Work*, Cambridge University Press, New York.
- Hunter, L.W., McDuffie, J.P. & Doucet, L. 2002, 'What makes teams take? Employee reactions to work reforms', *Industrial and Labor Relations Review*, vol. 55, no. 3, pp.448-472.

- Landman, R. 1999, *Comparing the TRACC World Class Manufacturing Model to the Lean Thinking World Class Manufacturing Model*, University of Cape Town, Cape Town. SA.
- Law, M. 1994, *Membership Survey, NZ Dairy Workers Union: Final Report*, Centre for Labour and Trade Union Studies, University of Waikato, Hamilton.
- _____ 1998, 'Mopping up after spilled milk: A survey of union members in the dairy industry', in Harbridge, R., Gadd, C. & Crawford, A. (eds), *Current Issues in Industrial Relations: Proceedings of the 12th AIRAANZ Conference*, Association of Industrial Relations Academics of Australia and New Zealand, Wellington, pp.212-220.
- _____ 2002, *Final Report, NZ Dairy Workers Union: Membership Survey 2000*, Centre for Labour and Trade Union Studies, Dept of Sociology and Social Policy, University of Waikato, Hamilton, 67pp +10.
- Law, M. & Cochrane, W. 2004, *Interim Report NZ Dairy Workers' Union Manufacturing Excellence Survey 2003*, Centre for Labour and Trade Union Studies, University of Waikato, Hamilton.
- Law, M. & Piercy, G. 1999, 'Workplace democracy and training reform: Some emerging insights from Australia and New Zealand', in Salling Olesen, H. & Jackson, K. (eds), *Adult Education and the Labour Market V*, Roskilde University Press, Denmark, Roskilde, pp.630-86.
- _____ 2000a 'Training and the new industrial relations: New Zealand research that explores Streeck's thesis', in Sork, T., Chapman, V. & St. Clair, R. (eds), *AERC 2000: 41st Annual Adult Education Research Conference Proceedings*, University of British Columbia, Vancouver, Canada, pp.235-240.
- _____ 2000b, 'Unions and education and training reform: a neglected story', Paper presented to the *New Zealand Association for Research in Education Conference*, Hamilton, December.
- _____ 2000c, 'The Carmichael vision and training reform: Some insights from across the Tasman', in Burgess, J. & Strachan, G. (eds), *Research on Work, Employment and Industrial Relations 2000, Proceedings of the 14th Association of Industrial Relations Academics Australia and New Zealand (AIRAANZ) Conference*, Vol. 2, 141-150, Newcastle, NSW: University of Newcastle, Newcastle, New South Wales.
- _____ 2001, *The Road to Fairer Unionism: Facilitating Greater Participation in the NZDWU*, (Commissioned report for the NZDWU), University of Waikato, Hamilton, pp 1-3.
- Lloyd, C. & Payne, J. 2002, 'Developing a political economy of skill', *Journal of Education and Work*, vol. 15, no. 4, pp.365-390.
- Parkin, M. 2004, *Manufacturing Excellence*, New Zealand Industry Training Organisation Annual Conference, Auckland.
- Perry, M., Davidson, C. & Hill, R. 1995, *Reform at Work*, Longman Paul, Auckland.
- Piercy, G. 1999, 'Strategy and vision: The influence of the AMWU on the NZEU 1987-1992 with respect to education and training reforms', Unpublished MSocSc Thesis, University of Waikato, Hamilton, New Zealand.
- _____ 2000, 'The influence of the AMWU on the NZEU with respect to education and training reforms between 1987 and 1992', in Burgess, J. & Strachan, G. (eds), *Research on work, employment and industrial relations 2000. Proceedings of the 14th Association of Industrial Relations Academics Australia and New Zealand (AIRAANZ) Conference*, vol. 4, University of Newcastle, Newcastle, NSW, Australia, pp.56-65.
- Small, M.H., & Yasin, M. 2000, 'Human factors in the adoption and performance of advanced manufacturing technology in unionized firms', *Industrial Management & Data Systems*, vol. 100, no. 8, pp.389-402.
- Womack, J.P. & Jones, D.T. 1996, *Lean Thinking*, Simon and Schuster Ltd, London.